



# California Solar Initiative

Research, Development, Demonstration and  
Deployment Program

Pre-Bid Webinar  
**Solicitation #3**

Aug 2, 2011

**Primary Target Area:** Grid Integration

**Secondary Target Areas:** Improved PV  
production technologies and Innovative  
business models

# Agenda

- ❑ **Overview of CSI RD&D Program**
- ❑ **Overview of Solicitation**
  - ✓ Purpose
  - ✓ Funding Available
  - ✓ Priority areas and targets
  - ✓ Match Funding Requirements
  - ✓ Key Dates
- ❑ **Proposal and Submittal Requirements**
  - ✓ Submittal Requirements
  - ✓ Application Package Requirements
- ❑ **Proposal Screening, Review and Selection**
- ❑ **Questions and Answers**

# CSI RD&D Program

*SB1 signed in 2006 -CPUC established CSI RD&D Program in 2007*

- *Allocated \$50 million for research, development, demonstration and deployment (RD&D) projects to further the overall goals of the CSI Program*
- *Adopted the “CSI RD&D Plan”*

*CSI RD&D Plan established:*

- *Goals and objectives*
- *Allocation guidelines for project funding*
- *Criteria for solicitation, selection and project funding*

*Three Target Areas Established for Program Funding:*

- *Grid-Integration: 50-65%*
- *Production Technologies: 10-25%*
- *Business Development and Deployment: 10-20%*

**CSI RD&D TimeLine To-Date:**



# Goals and Objectives of the CSI RD&D Program

**Goal:** Help build a sustainable and self-supporting industry for customer-sited solar in California

## Objectives:

- ❑ Help lower solar technology electricity prices to levels where they are comparable to retail electricity prices, and
- ❑ Help support the deployment of distributed solar to accomplish the CSI goal of **3000 MW** by 2016
  - ✓ CPUC: 1940 MW
  - ✓ CEC: 360 MW
  - ✓ POU: 700 MW



# Key Principles of CSI RD&D Plan

- ❑ The Adopted Plan established the following seven key principles that are the focus of the RD&D Program
  1. Improve the economics of solar technologies by reducing technology costs and increasing system performance.
  2. Focus on issues that directly benefit California, and that may not be funded by others.
  3. Fill knowledge gaps to enable successful, wide-scale deployment of solar distributed generation technologies.
  4. Overcome significant barriers to technology adoption.
  5. Take advantage of California's wealth of data from past, current, and future installations to fulfill the above.
  6. Provide bridge funding to help promising solar technologies transition from a pre-commercial state to full commercial viability.
  7. Support efforts to address the integration of distributed solar power into the grid in order to maximize its value to California ratepayers.

# Funded Projects

- ❑ Grant to the Lawrence Berkeley National Laboratory, Solar Energy Research Center - \$10 million
  
- ❑ Two Grant solicitations conducted to-date
  - ✓ 17 projects awarded funding just over \$23 million
  - ✓ Leveraging over \$ 17 million in match funds

<http://www.calsolarresearch.ca.gov/Funded-Projects/>

# Solicitation #3 Target Areas

## 1. Primary Target Area:

- ✓ Grid Integration

## 2. Secondary Target Areas:

- ✓ Improved PV production technologies
- ✓ Innovative business models

# Solicitation #3 - Budget by Target Area

Target Area	Grid Integration	Production Technologies and Business Models	Total
Estimated Funding for Area	\$9 million	\$3 million	\$12 million
Estimated Per-Project Funding	\$500,000 – \$2 million	\$200k - \$500k	N/A

# Primary Target Area: Grid Integration

- ❑ Cost-effective strategies and solutions for integrating large amounts of PV into distribution systems
- ❑ Demonstration projects that provide solutions to integration of PV into the electricity grid
- ❑ Utility partnership and participation is key and critical for projects in this area

# Grid Integration – Possible Topic Areas

## ❑ Utility Interconnection

- ✓ Demonstrations of ways to streamline interconnection procedures
- ✓ Demonstrations of interconnection procedures used in other states or countries
- ✓ Investigations that benefit the efforts of the Renewable Energy Collaborative (Re-DEC) and the Rule 21 Working Group

## ❑ Grid Operations

- ✓ Demonstrations of methods to identify optimal locations of PV
- ✓ Demonstrations that assess the impacts of high penetration PV on distribution circuits
- ✓ Dynamic system modeling that takes into account voltage sags, islanding and reverse power flows

## ❑ Solar Modeling

- ✓ Resource modeling with higher resolution for better forecasting
- ✓ Validation of estimation using metered data

# Secondary Area 1: Improved PV Production Technologies

- ❑ **Testing and demonstrations of production technologies that focus on improved system performance, increased system efficiency, or lower system costs, such as (but not limited to):**
  - ✓ Economic viability of distributed concentrating PV systems
  - ✓ Building-integral PV (BIPV) products that can compete with rooftop PV
  - ✓ Inverter technologies with improve reliability and performance
  - ✓ Integration of inverters with “smart meters”
  - ✓ Energy storage for smaller PV systems
  - ✓ Innovative hybrid solar thermal/electric systems

## Secondary Area 2: Innovative Business Models

- ❑ **Innovative business models that support the market and end user, such as (but not limited to):**
  - ✓ Potential roles for utilities in solar PV
  - ✓ Development of lower cost, utility-grade PV system control, metering, and monitoring capacity
  - ✓ Demonstrations of improved PV economics using advanced metering, price-responsive tariffs (e.g., Time of Use—TOU, Feed-in Tariff), and storage.
  - ✓ Demonstrations of innovative ways to lower installation or operations and maintenance costs
  - ✓ Testing and demonstrations of virtual net metering approaches
  - ✓ Testing and an assessment of the economic aspects of energy storage
  - ✓ Assessing the actual risks and benefits of solar systems to the utilities

# Eligible Proposers

- ❑ ***Participation is open to all types of:***
  - ✓ Individuals
  - ✓ Businesses
  - ✓ Non-profit organizations
  - ✓ Academic institutions
  - ✓ National laboratories
  - ✓ Utilities
  
- ❑ ***Individuals may submit only one proposal per solicitation***
  
- ❑ ***Proposed research must focus on CA-specific issues and provide benefits to CA ratepayers***

# Eligible Technologies

***“solar technologies and other distributed generation technologies that employ or could employ solar energy for generation or storage of electricity or to offset natural gas usage”***

ref : CSI Solar RD&D Plan

## ☐ Technologies:

- ✓ All solar technologies (including solar thermal)
- ✓ Balance-of-system components such as:
  - advanced meters
  - inverters
  - storage

# Match Funding Requirements

- ❑ A minimum of 50% match funding is required
- ❑ Match can be cash or in-kind services
- ❑ Match can come from a variety of sources including the applicant, federal or state government (including ARRA) industry, utilities or other entities
- ❑ Match funding will be evaluated through the proposal review and selection process

**Total Project cost = CSI funding request + Match Funding**

**Where: Match funding is at least 50% of Total Project cost**

# Key Dates for this Grant Solicitation

ACTION	DATE
Grant Solicitation Released	July 14, 2011
Pre-bid Webinar	August 2, 2011
Deadline for Questions	August 2, 2011
Question and Answers posted	by August 12, 2011
<b>Due Date for Grant Proposals</b>	<b>September 1, 2011 by 4:00 P.M. (PDT)</b>
Grants Approved by CPUC (estimate)	Early December, 2011
Grant Start Date (estimate)	January – February 2012

# Proposal and Submittal Requirements

- ❑ **ONLY Electronic submission is required**
  - ✓ Proposal should be a **single PDF** file
  - ✓ Submit to **<http://www.calsolarresearch.ca.gov/Current-Solicitations/submit-proposal.html>**
  - ✓ Applicant will receive an e-mail confirmation as receipt
  
- ❑ **Do not submit proprietary or confidential information with your application!**
  
- ❑ **All applications are due no later than**  
**4:00 P.M. (PDT) on Tuesday, September 1, 2011**

# Proposal Submission

<http://www.calsolarresearch.ca.gov/Current-Solicitations/submit-proposal.html>

CSI RD&D > CSI RD&D Solicitations ▶ Submit Your Proposal

CSI RD&D

Please enter all the information below per the coveragepage (Exhibit A) of your proposal.

## Proposal Submission for Sol#3

### Project Title

Enter project title as stated in Exhibit A, coveragepage of your proposal

\*

### Target Area

Please select the applicable target area/s. You can check more than one area, if applicable.

- Grid Integration
- Production Tech
- Business Models

### Applicant Category

Select category from drop down list

\*

### Grant Funding Request (\$)

Enter amount without the \$ sign. Maximum limit is 2,000,000

\*

### Match Funding Provided (\$)

Enter amount without the \$ sign. Minimum is 50% of total project cost.

\*

### Principal Investigator

Enter First name and Last name

\*

### Email

Enter a valid email address for primary contact

\*

### Applicant Organization

Enter name of primary applicant organization

\*

### Upload Proposal

Select and upload only PDF file (20 MB limit)

Browse...

\*

## NOTES ON SUBMISSION

All fields are required for successful submission

Enter valid email address to receive submission confirmation

 **Submit Form**

 **Preview** or [Reset](#)

# Application Package Requirements

## ***Application Package must include the following:***

- ✓ Grant Application Cover Page
- ✓ Project Summary
- ✓ Project Goals
- ✓ Project Performance/Cost Objectives
- ✓ Approach and Scope of Work
- ✓ Project Personnel
- ✓ Task and Budget Summary
- ✓ Match Funding
- ✓ Schedule of Deliverables
- ✓ Feasibility
- ✓ Market Connection

## ***Please note page limits***

# Budget Guidance

- ❑ Task 1 – Project Management (should be no more than 6-10% of total project)
- ❑ No need to provide sub-task budget break up for Task 1
- ❑ All other tasks should be structured as best suited to your proposed project.
  - ✓ Include sub-tasks only where required
- ❑ Provide budget summary at Task level (at a minimum) and include budget by sub-task (as appropriate)
- ❑ Equipment purchases will only be considered for CSI funding if absolutely critical to the project (See section 5.3 of the sample grant agreement for more details)

California Solar Initiative Research, Demonstration, and  
Deployment Program Grant Solicitation #3  
PROPOSED BUDGET SUMMARY

Exhibit B

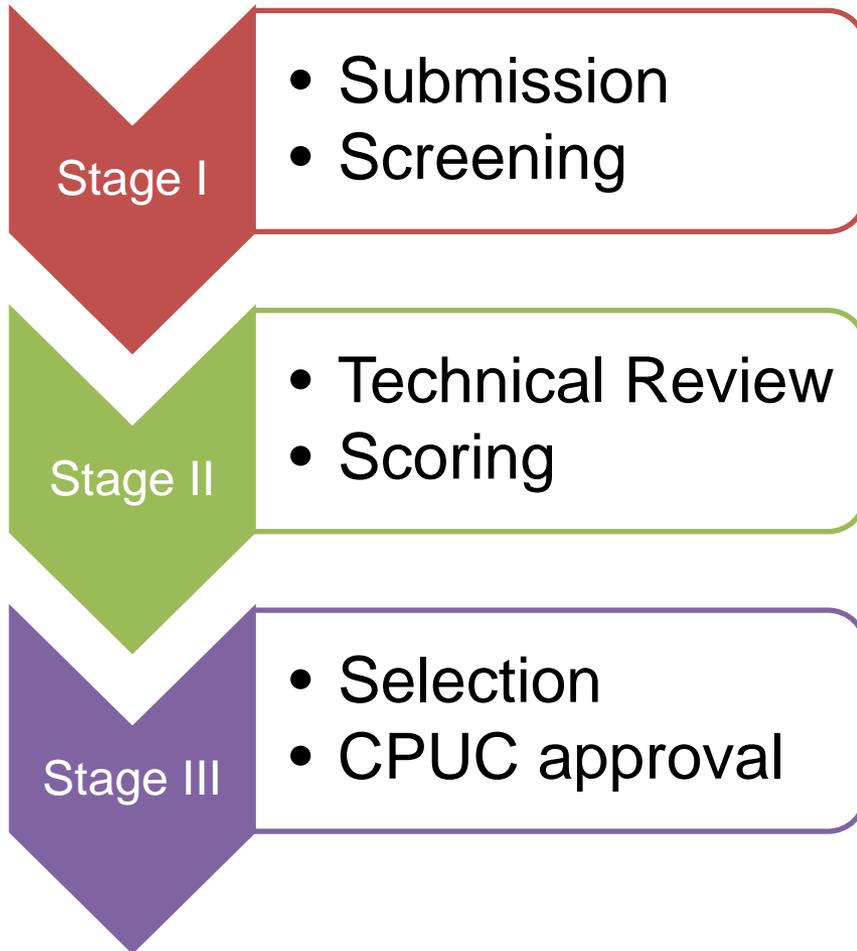
Project Title:			
Project Tasks	CSI RD&D Funds Requested	Match Funding	Total (CSI RD&D Funds + Match)
<b>Task 1 Project Management</b>			
Task Sub Total	\$ -	\$ -	\$ -
<b>Task 2 <i>Proposed project task</i></b>			
<i>Insert sub tasks and related budgets as appropriate</i>			
Task Sub Total	\$ -	\$ -	\$ -
<b>Task 3 <i>Next task</i></b>			
<i>Insert sub tasks and related budgets as appropriate</i>			
Task Sub Total	\$ -	\$ -	\$ -
<i>Expand table to include as many tasks as applicable to the proposed project</i>			
<b>OTHER DIRECT EXPENSES</b>			
Travel (combine all travel expenses on this line)			
Equipment Rental/Use Fees			
Major Equipment Purchases (for items costing over \$5,000)			
Materials/Supplies/Equipment/Misc.			
Sub Total other expenses	\$ -	\$ -	\$ -
<b>Total Project Budget</b>	\$	\$	\$

Fill in the white boxes with the amounts

**Suggested table for Match Fund**

Match Funds	Contributing entity
\$ xxx	ABC Company
\$ yyy	Another Program funding
<b>\$ SUM</b>	<b>Total</b>

# Review and Selection Process



- ❑ **Proposals must receive an average overall score of 150 points (out of 200 possible) to be considered for funding**

# Project Selection Criteria

## ❑ Guidelines for selection criteria to include:

- ✓ **Utility participation**
- ✓ Match funding provided
- ✓ Benefits accrued to California ratepayers
- ✓ Level of funding requested from RD&D Program
- ✓ Potential to expand PV market opportunities or reduce barriers
- ✓ Milestones targeted
- ✓ Institutional or regulatory feasibility
- ✓ Visibility and educational component
- ✓ Capabilities, qualifications and experience of team
- ✓ Size of RD&D grant and budget allocations

# Additional pointers

Pay special attention to the following aspects of the proposal:  
(apart from the main goal)

## ❑ Deliverables

- ✓ Clearly state the product that is expected as an outcome of the research

## ❑ Market Connection

- ✓ Who (audience) will benefit from this research/project? What entity or types of entities will use this project?
- ✓ How will they benefit? Does the proposal demonstrate their interest in the outcome of the project?
- ✓ Benefit to California rate payers
- ✓ Utility connection/participation (where relevant)

## ❑ Match Funding (50% minimum of overall project cost)

- ✓ Leveraging other funding sources effectively
- ✓ Firm commitments on securing match funding

## ❑ Equipment purchases – do not include in grant budget unless critical to project completion

# GRANT AGREEMENT

Please note that all grantees must accept the grant terms and conditions as stated in Exhibit C. **There will be no changes to this agreement.** The CPUC reserves the right to cancel the award and reallocate the funds if an entity does not accept the terms and conditions as stated.

# Questions and Answers

[www.CalSolarResearch.ca.gov](http://www.CalSolarResearch.ca.gov)

[info@calsolarresearch.ca.gov](mailto:info@calsolarresearch.ca.gov)